

## Introduction to Data Packages 2.0

Analyzer Data Packages 2.0 provides a quick and easy way to convert data from Excel files and inter-related relational database tables into multi-dimensional Analytics Cubes, all without using any complicated development tools or needing to know any special languages. Completed Analytics Cubes then become the source for multi-dimensional data analysis. Users can build reports using Analyzer's easy-to-use report design front-end.

Once mastered, users can resolve any data analysis tasks at hand, dramatically increasing productivity and quality and can finally replace those Excel reports often created by tediously Copying and Pasting data from one period to the next.

### Major Features of Data Packages 2.0

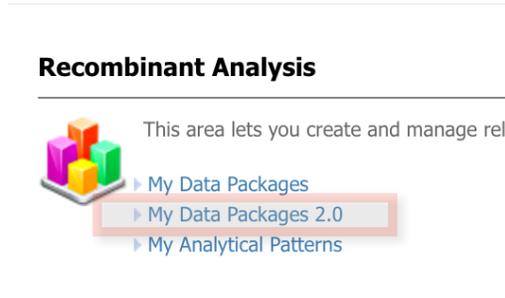
1. **Supports multiple data source mash-up** - Consider the following scenario; The sales data is stored in an ERP system that uses a SQL Server database. The sales budget is in an Excel file and the detailed customer data resides in the cloud hosted by Salesforce. With Data Packages 2.0 you can integrate all of these data sources into one single Data Package. Users can select different fields to use with the *Lookup* feature.
2. **Data Consolidation** - Two major uses of Data Consolidation – 1) Data cleansing - Often data errors are made when entering the data depending on business rules, for example, one person might enter “California” and another person may enter “CA” or “ca”. These three entries can be interpreted by a database as three unique values. This example can be easily fixed using the *Data Consolidation* feature. 2) Creating buckets to group data. Users can create consolidation groups like West Coast or East Coast regions from states, for example.
3. **Data Discretize**. Two major uses of Data Discretize – 1) Provides a way to turn various values or facts into meaningful groups. For example, customers' revenue or employee count could be divided into *Small*, *Medium*, and *Large* groups. Another example could be to divide patient's ages into different range groups, for example, 25-35, 35-50, etc. 2) Data Discretize can also be applied to time calculations. It can automatically calculate the difference between two date intervals and automatically create groups based on time differences. One example could be to manage or analyze inventory ages or Accounts Receivable ages. *Data Discretize* can automatically compute the dates and update the groups accordingly.
4. **Date-time Settings**. Analysis based on date is often very different from industry to industry or from company to company. Finance reports will likely use Fiscal periods instead of Calendar periods. Retail, manufacturing and other industries will sometimes use a 4-4-5, 5-4-4 or 4-5-4 calendar. The Data Packages 2.0 Date-time feature allows user to adapt to different types of calendar requirements.
5. **Financial Reporting**. Often, different accounting reports require different aggregation types. For example, a balance sheet would require a Last Child aggregation so that the balance for FY2015 Cash and Cash Items account is the same as the Q4 FY2015 closing period balance and not the sum of every quarter in FY2015. On the other hand, an income statement account will use SUM to aggregate values across time. Analyzer Data Packages 2.0 easily supports configurable options for these situations.

In addition to the five listed above, the Data Packages 2.0 also includes many additional flexible features as explained below.

## 1.1 Using Data Packages 2.0

Click **My Data Packages 2.0** under the Recombinant Analysis section of the home page.

Note: The Data Packages feature is only available with the Data Packages key installed. Users also need to be a member of the Report Designer role.



First time users would only see a toolbar.



Icon	Description
	Return to home page
	Create a new data package
	Refresh current screen
	Delete selected data packages
	Data package scheduling
	Data package security
	Data package settings

## 1.2 Create a new Data Package

Click the **New Data Package** icon on the toolbar to create a new Data Package. There are 5 main steps to configure a Data Package:

1. Choose a data source type for the source data, for example – Excel file, SQL Server database, or Google Sheets, etc.
2. Select data from the data source, for example, selecting a table or tables from a SQL Server database or a worksheet from an Excel file.

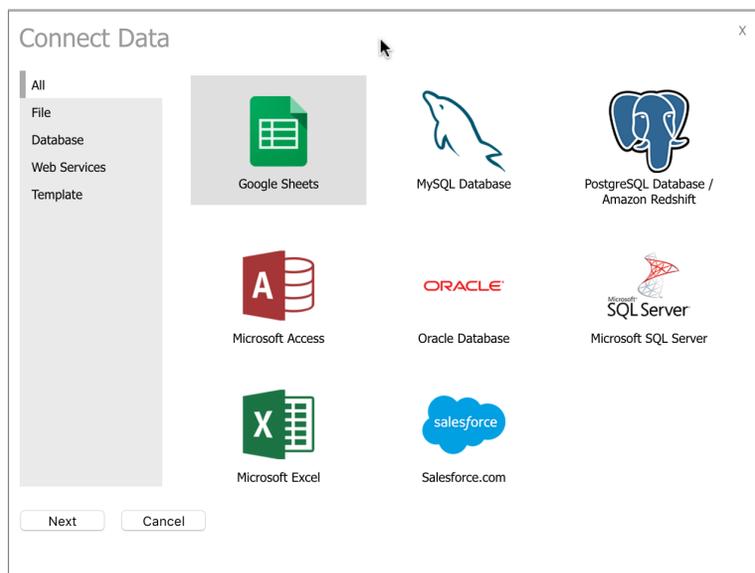
3. Pick a primary table for analysis. If more than one table is selected from the database or more than one data sheet is selected from an Excel file, the user will be asked to identify one of the tables or sheets to be the **primary table**. This is the table that contains the facts or measures to be analyzed, (for example Sales Amount).
4. Load data and configure various settings (to be explained in detail below).
5. Save and process the Data Package.

### 1.2.1 Select a Data Source

When building a new Data Package, the system will display a *Connect Data* dialog box to let the user choose a starting data source type to connect to the target data. Current available data source types include:

1. File type – Microsoft Excel files and Microsoft Access files.
2. Database – Relational databases such as Microsoft SQL Server, Oracle, MySQL, etc.
3. Web Services – Cloud applications such as Salesforce.com, QuickBooks Online, etc.
4. Templates – Provides Data Packages and report templates for cloud applications (Available in next version).

The flexible Data Source design template in Data Packages 2.0 will easily allow additional data connectors to be added in future updates.



In the below example, we will use an Excel file with three data sheets for Food Court Sales. The data sample includes Store Sales, Menu Items and Location data. The Store Sales worksheet contains daily sales details. This will become our Primary Table.

### Store Sales Data Sheet

	A	B	C	D	E	F
1	Store Location	Menu Item	POS Date	Quantity	Sales Amount	Due Date
2	Baybrook Mall	AVOCADO CLUB EGG ROLLS	1/6/14	32	332.48	10/18/15
3	Baybrook Mall	BAJA CHICKEN ROLLS	1/6/14	118	1060.82	10/18/15
4	Baybrook Mall	LETTUCE WRAPS	1/6/14	80	799.2	10/18/15
5	Baybrook Mall	MEDITERRANEAN VEGGIE ROLLS	1/6/14	63	566.37	10/18/15
6	Baybrook Mall	SESAME GINGER CHICKEN DUMPLINGS	1/6/14	106	899.94	10/18/15
7	Baybrook Mall	SPINACH ARTICHOKE DIP*	1/6/14	46	482.54	10/18/15
8	Baybrook Mall	THAI CHICKEN ROLLS	1/6/14	127	1141.73	10/18/15
9	Baybrook Mall	TUSCAN HUMMUS	1/6/14	40	279.6	10/18/15
10	Baybrook Mall	ASPARAGUS + ARUGULA SALAD	1/6/14	123	724.47	10/18/15

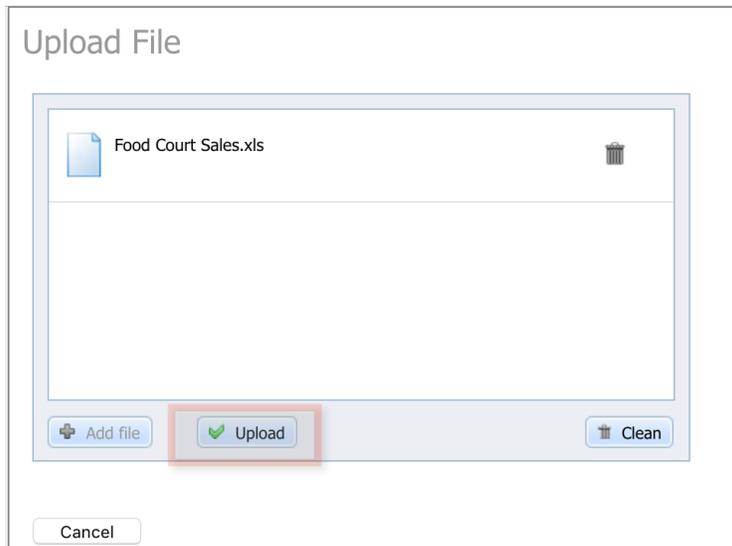
### Menu Items Data Sheet

	A	B	C
1	Menu Category	Menu Item	Price
2	Appetizers	AVOCADO CLUB EGG ROLLS	10.39
3	Appetizers	BAJA CHICKEN ROLLS	8.99
4	Appetizers	LETTUCE WRAPS	9.99
5	Appetizers	MEDITERRANEAN VEGGIE ROLLS	8.99
6	Appetizers	SESAME GINGER CHICKEN DUMPLIN	8.49
7	Appetizers	SPINACH ARTICHOKE DIP*	10.49
8	Appetizers	THAI CHICKEN ROLLS	8.99
9	Appetizers	TUSCAN HUMMUS	6.99

### Location Data Sheet

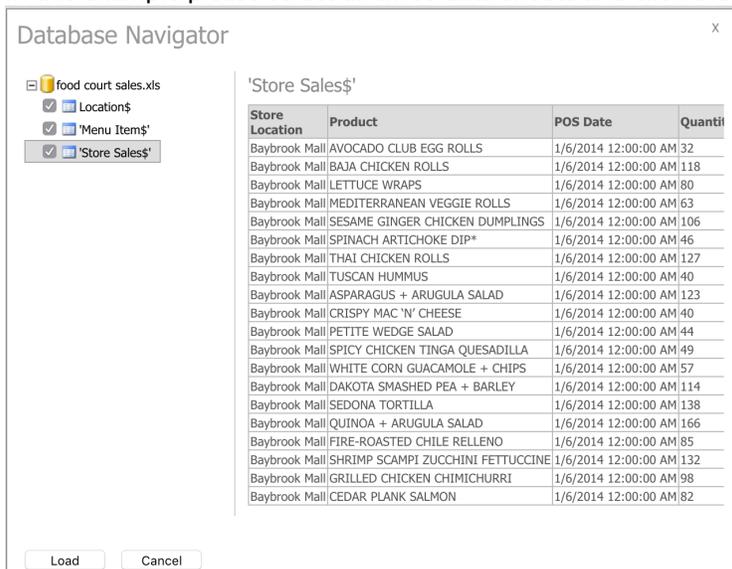
	A	B	C	D	E
1	Store Location	Store Manager	State	Country	City
2	Baybrook Mall	Kurt Mergold	TX	United States	Houston
3	Sugarland	Boris Barrett	TX	United States	Sugar Land
4	Downtown Seattle	Corey Johar	WA	United States	Seattle
5	Irvine Spectrum	Mishna Jones	CA	United States	Irvine
6	Southcenter Mall	Howard Tiana	WA	United States	Seattle
7	Laguna Hills Mall	Bernat Linton	California	United States	Laguna Hills

Under File, Select Microsoft Excel and then Click the **Next** button. The **Upload File** dialog is now displayed. Click the **Add File** button to select the Excel file to be uploaded then click the **Upload** button to upload the file.



After upload has completed, the **Database Navigator** is now displayed. This will have all the data sheets in the uploaded Excel file. You can preview each sheet by clicking on the sheet name.

In this example please select all three data sheets and click the **Load** button.



Since multiple sheets will be used, the user will be prompted to select a sheet as the Primary Table. A Primary Table usually contains the measure values that we want to analyze. In this example, please select the *Store Sales* Sheet as the Primary Table then click the **Load** button again.

### Load Settings

Primary table for analysis  
Primary table is the table contains measures of facts

food court sales.xls.'Store Sales\$' 

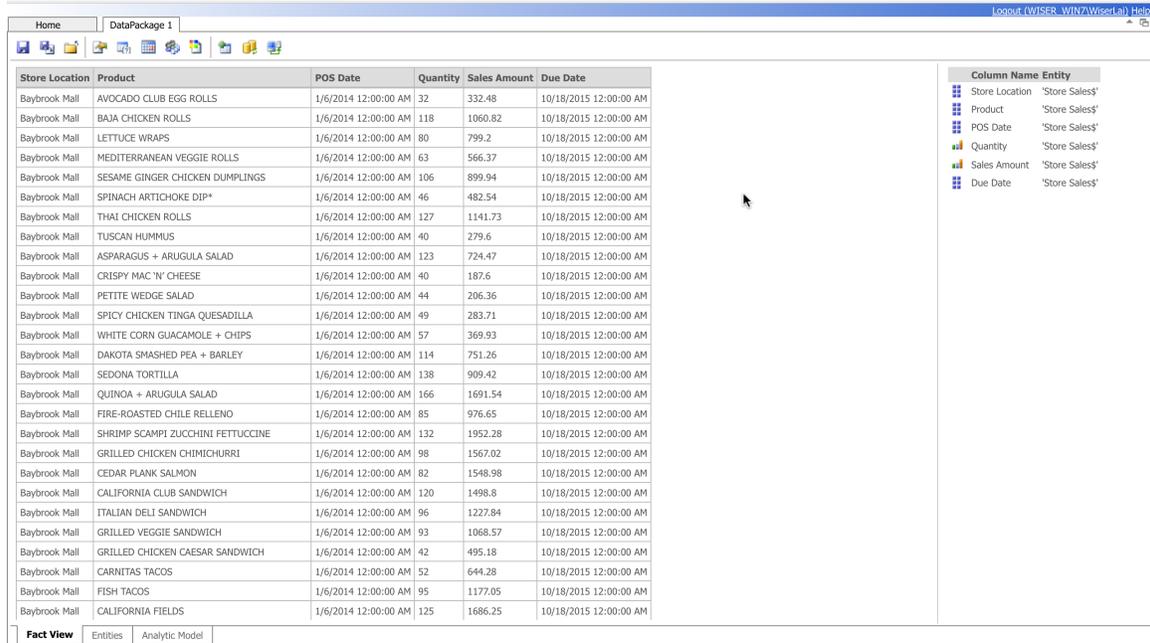
During loading we can see the progress in the Load Data dialog box. Click **OK** after completion to enter the Data Packages Editor screen.

### Loading Data

- ✓ Location\$ (15 of 15 rows copied)
- ✓ 'Menu Item\$' (94 of 94 rows copied)
- ▒▒▒ 'Store Sales\$' (15450 of 65535 rows copied)

## 1.2.2 Data Packages Editor

The Data Packages Editor provides users many ways to customize imported data as well as operations such as saving, closing or modifying a Data Package's properties. Many of these features can be found on the toolbars.



Store Location	Product	POS Date	Quantity	Sales Amount	Due Date
Baybrook Mall	AVOCADO CLUB EGG ROLLS	1/6/2014 12:00:00 AM	32	332.48	10/18/2015 12:00:00 AM
Baybrook Mall	BAJA CHICKEN ROLLS	1/6/2014 12:00:00 AM	118	1060.82	10/18/2015 12:00:00 AM
Baybrook Mall	LETTUCE WRAPS	1/6/2014 12:00:00 AM	80	799.2	10/18/2015 12:00:00 AM
Baybrook Mall	MEDITERRANEAN VEGGIE ROLLS	1/6/2014 12:00:00 AM	63	566.37	10/18/2015 12:00:00 AM
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Baybrook Mall	SPINACH ARTICHOKE DIP*	1/6/2014 12:00:00 AM	46	482.54	10/18/2015 12:00:00 AM
Baybrook Mall	THAI CHICKEN ROLLS	1/6/2014 12:00:00 AM	127	1141.73	10/18/2015 12:00:00 AM
Baybrook Mall	TUSCAN HUMMUS	1/6/2014 12:00:00 AM	40	279.6	10/18/2015 12:00:00 AM
Baybrook Mall	ASPARAGUS + ARUGULA SALAD	1/6/2014 12:00:00 AM	123	724.47	10/18/2015 12:00:00 AM
Baybrook Mall	CRISPY MAC 'N' CHEESE	1/6/2014 12:00:00 AM	40	187.6	10/18/2015 12:00:00 AM
Baybrook Mall	PETITE WEDGE SALAD	1/6/2014 12:00:00 AM	44	206.36	10/18/2015 12:00:00 AM
Baybrook Mall	SPICY CHICKEN TINGA QUESADILLA	1/6/2014 12:00:00 AM	49	283.71	10/18/2015 12:00:00 AM
Baybrook Mall	WHITE CORN GUACAMOLE + CHIPS	1/6/2014 12:00:00 AM	57	369.93	10/18/2015 12:00:00 AM
Baybrook Mall	DAKOTA SMASHED PEA + BARLEY	1/6/2014 12:00:00 AM	114	751.26	10/18/2015 12:00:00 AM
Baybrook Mall	SEDONA TORTILLA	1/6/2014 12:00:00 AM	138	909.42	10/18/2015 12:00:00 AM
Baybrook Mall	QUINOA + ARUGULA SALAD	1/6/2014 12:00:00 AM	166	1691.54	10/18/2015 12:00:00 AM
Baybrook Mall	FIRE-ROASTED CHILE RELLENO	1/6/2014 12:00:00 AM	85	976.65	10/18/2015 12:00:00 AM
Baybrook Mall	SHRIMP SCAMPI ZUCCHINI FETTUCCINE	1/6/2014 12:00:00 AM	132	1952.28	10/18/2015 12:00:00 AM
Baybrook Mall	GRILLED CHICKEN CHIMICHURRI	1/6/2014 12:00:00 AM	98	1567.02	10/18/2015 12:00:00 AM
Baybrook Mall	CEDAR PLANK SALMON	1/6/2014 12:00:00 AM	82	1548.98	10/18/2015 12:00:00 AM
Baybrook Mall	CALIFORNIA CLUB SANDWICH	1/6/2014 12:00:00 AM	120	1498.8	10/18/2015 12:00:00 AM
Baybrook Mall	ITALIAN DELI SANDWICH	1/6/2014 12:00:00 AM	96	1227.84	10/18/2015 12:00:00 AM
Baybrook Mall	GRILLED VEGGIE SANDWICH	1/6/2014 12:00:00 AM	93	1068.57	10/18/2015 12:00:00 AM
Baybrook Mall	GRILLED CHICKEN CAESAR SANDWICH	1/6/2014 12:00:00 AM	42	495.18	10/18/2015 12:00:00 AM
Baybrook Mall	CARNITAS TACOS	1/6/2014 12:00:00 AM	52	644.28	10/18/2015 12:00:00 AM
Baybrook Mall	FISH TACOS	1/6/2014 12:00:00 AM	95	1177.05	10/18/2015 12:00:00 AM
Baybrook Mall	CALIFORNIA FIELDS	1/6/2014 12:00:00 AM	125	1686.25	10/18/2015 12:00:00 AM

Column Name	Entity
Store Location	'Store Sales'
Product	'Store Sales'
POS Date	'Store Sales'
Quantity	'Store Sales'
Sales Amount	'Store Sales'
Due Date	'Store Sales'

At the bottom of the Data Packages Editor there are three tabs – **Fact View**, **Entities**, and **Analytic Model**.

**Fact View** – Choose and manage fields in the Primary Table to be used for analysis. This includes Lookup, Consolidate, Date-Time, Settings and many more.

**Entities** – Add or remove data sources from the Data Package and specify how data is to be updated.

**Analytic Model** – Preview the Data Package cube structure – Attributes and Measures and Calculated Measures. Future updates will also include Named Sets and KPIs.

## 1.2.3 Fact View

Most of the Data Package settings can be found in the **Fact View** section. The screen is divided into left and right panels. The left panel shows a preview of the Fact table. Setting changes will be reflected in this table immediately. The panel on the right shows the Fact View attribute and measure field names. After selecting the Primary table initially, all fields from the Primary Table are displayed in this panel. Users can right-click on each of the fields to remove, hide, or select additional commands to be executed.

Store Location	Product	POS Date	Quantity	Sales Amount	Due Date
Baybrook Mall	AVOCADO CLUB EGG ROLLS	1/6/2014 12:00:00 AM	32	332.48	10/18/2015 12:00:00 AM
Baybrook Mall	BAJA CHICKEN ROLLS	1/6/2014 12:00:00 AM	118	1060.82	10/18/2015 12:00:00 AM
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Baybrook Mall	CALIFORNIA FIELDS	1/6/2014 12:00:00 AM	125	1686.25	10/18/2015 12:00:00 AM

Fact View Entities Analytic Model

Column Name Entity

- Store Location 'Store Sales'
- Product 'Store Sales'
- POS Date 'Store Sales'
- Quantity 'Store Sales'
- Sales Amount 'Store Sales'
- Due Date 'Store Sales'

Due Date Context Menu:

- Lookup Columns
- Consolidate
- Discretize
- Set Key
- Set Due Date as Measure
- Date/Time Settings
- Create New Hierarchy
- Duplicate Due Date
- Hide Due Date
- Remove Due Date
- Show Hidden Columns
- New User Defined Column
- Attribute Settings
- Edit Member Properties

## Hide Columns

Users can hide fields that they do not want to be included in the Analytic Model. These fields will be inaccessible for data analysis later. All hidden fields are stored in the Staging table. Users can choose to revert a hidden status at any time by right-clicking and selecting - **Show Hidden Columns**.

Column Name Entity

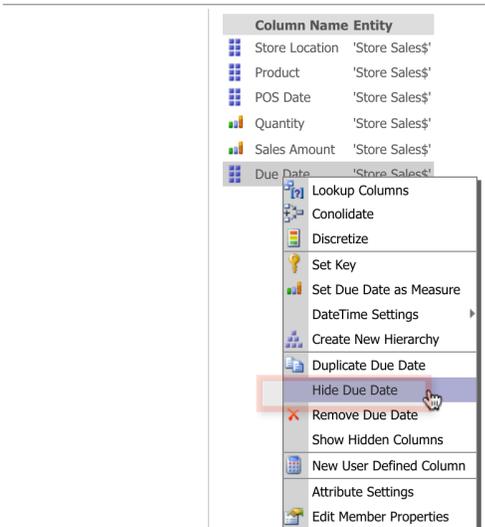
- Store Location 'Store Sales'
- Product 'Store Sales'
- POS Date 'Store Sales'
- Quantity 'Store Sales'
- Sales Amount 'Store Sales'
- Due Date 'Store Sales'

Due Date Context Menu:

- Lookup Columns
- Consolidate
- Discretize
- Set Key
- Set Due Date as Measure
- Date/Time Settings
- Create New Hierarchy
- Duplicate Due Date
- Hide Due Date
- Remove Due Date
- Show Hidden Columns
- New User Defined Column
- Attribute Settings
- Edit Member Properties

## Remove Columns

The Remove Columns function removes a field from the Fact View. Removed fields can only be added back to Fact View through Entities. Normally it is not required to remove a field but there are times when a field is removed in the source database or in the Excel file so to ensure proper processing the field will need to be removed. If a changed field is already a part of a Fact View, then the field will first need to be removed from the Fact View before removing it from the Entities. Please note that to ensure proper functioning of the Data Package, do not remove fields that are being referenced by other fields.



## Attributes and Attribute Settings

Attributes are automatically identified from the data, selecting non-value data types (text, date, varchar, etc.). Attributes are used for filtering or categorizing data as seen in the example below where Product, Store, Location, and POS Date are attributes to categorize and to filter *Sales Amount* and other measure values.

**PivotTable1**

▼ POS Date 8/25/2014

DataPackage 1

Product ▼	Store Location ▼							
	Baybrook Mall		Countryside Mall		Downtown Seattle		Eastland	
	Quantity	Sales Amount	Quantity	Sales Amount	Quantity	Sales Amount	Quantity	Sales Amount
ASPARAGUS + ARUGULA SALAD	91	536	155	913	70	412	127	748
ASPARAGUS + SPINACH SPAGHETTINI	118	1,438	54	658	112	1,365	71	865
AVOCADO CLUB EGG ROLLS	72	748	51	530	158	1,642	96	997
BAJA CHICKEN ROLLS	135	1,214	89	800	113	1,016	125	1,124
BELGIAN CHOCOLATE SOUFFLÉ CAKE	164	1,064	157	1,019	71	461	80	519
BUTTER CAKE	27	175	33	214	87	565	143	928
CALIFORNIA CLUB	126	1,763	28	392	165	2,308	131	1,833
CALIFORNIA CLUB SANDWICH	121	1,511	76	949	91	1,137	168	2,098
CALIFORNIA COBB	138	2,055	75	1,117	139	2,070	160	2,382
CALIFORNIA FIELDS	59	796	64	863	112	1,511	158	2,131
CALIFORNIA VEGGIE	65	864	116	1,542	23	306	38	505
CARAMELIZED PEACH	39	518	75	997	116	1,542	121	1,608
CARNITAS TACOS	66	818	93	1,152	53	657	49	607
CEDAR PLANK SALMON	58	1,096	94	1,776	35	661	118	2,229

Attribute setting can be accessed by right-click on any of the attributes then selecting **Attribute Settings**.

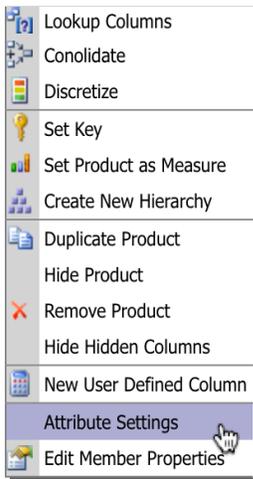
**Name** - Name of the attribute.

**Key Column** - Set attribute's sorting rule by selecting the key column for ordering.

**Name Column** - Set names to use for the attribute members. Normally this is not changed.

**Attribute Type** - The attribute type default is *Regular*. Normally there is no need to change it. The primary exception is when setting up semi-additive measures by account type.

**Display Folder** - Specify the name of the Display Folder to store the attribute.



### Attribute Settings

Name  
Product

Advanced Settings

Key Column  
Product

Name Column  
Product

Attribute Type  
Regular

Display Folder

Ok Cancel

## Measure and Measure Settings

Measures are automatically identified in the data with value data types (integer, float, etc.). Measures are the values in a Pivot Table as seen here as Sales Quantity and Sales Amount measures.

PivotTable1  
POS Date 8/25/2014

DataPackage 1	Store Location							
	Baybrook Mall		Countryside Mall		Downtown Seattle		Eastland	
Product	Quantity	Sales Amount	Quantity	Sales Amount	Quantity	Sales Amount	Quantity	Sales Amount
ASPARAGUS + ARUGULA SALAD	91	536	155	913	70	412	127	748
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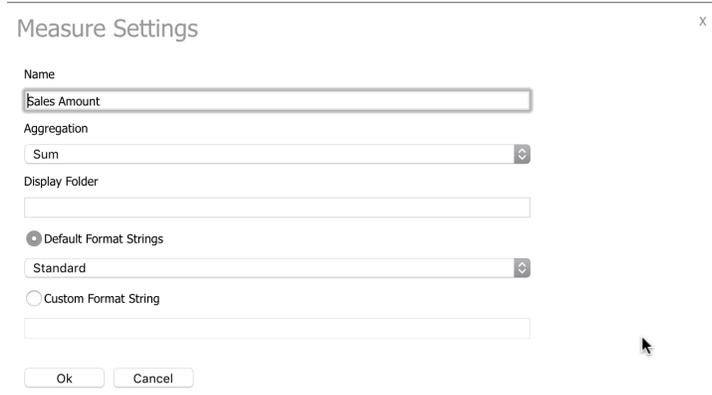
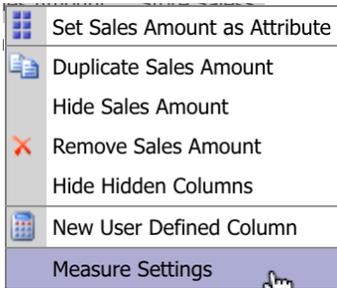
Right-clicking on any measure opens the *Measure Settings* dialog box.

**Name** - Name of the measure. This is often changed to make the measure more easily identified by the user.

**Display Folder** - Enter the name of the Display Folder to organize the measures.

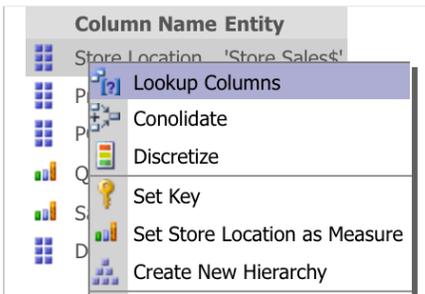
**Aggregation** - Set type of aggregation to be used with this measure. This can be Sum, Min, Max, Count or DistinctCount for example.

**Format String** - Set how the measure will be displayed, for example to set the number of decimal points to display.



### Lookup Columns

When the Data Package is initially created, only the Primary Table is displayed in the Fact View. Users can use the *Lookup Columns* function to add related columns from other tables or sheets. For example, if a user would like to see Store Manager, State, and City columns from Location Data Sheet based on the Store Location column in the Primary table, simply right-click on the Store Location attribute and select *Lookup Columns*.



### Other settings in Lookup Columns

*Destination Entity* – Select the entity of the lookup column.

*Destination Columns* – Select the column in the Destination to match.

*Lookup Columns* – Select the columns.

Lookup Columns

Destination Entity

Source Columns	Destination Columns
Store Location	Store Location

Lookup Columns

- Store Location
- Store Manager
- State
- Country
- City

Ok Cancel

Result of executing *Lookup Columns - Store Manager, State, Country and City* columns are now added to the Fact View tables as attributes.

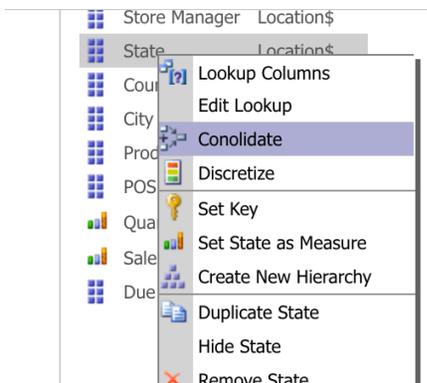
Store Location	Store Manager	State	Country	City	Product	POS Date	Quantity	Sales Amount	Due Date
Baybrook Mall	Kurt Mergold	TX	United States	Houston	AVOCADO CLUB EGG ROLLS	1/6/2014 12:00:00 AM	32	332.48	10/18/2015 12:00:00 AM
Baybrook Mall	Kurt Mergold	TX	United States	Houston	BAJA CHICKEN ROLLS	1/6/2014 12:00:00 AM	118	1060.82	10/18/2015 12:00:00 AM
Baybrook Mall	Kurt Mergold	TX	United States	Houston	LETTUCE WRAPS	1/6/2014 12:00:00 AM	80	799.2	10/18/2015 12:00:00 AM
Baybrook Mall	Kurt Mergold	TX	United States	Houston	MEDITERRANEAN VEGGIE ROLLS	1/6/2014 12:00:00 AM	63	566.37	10/18/2015 12:00:00 AM
Baybrook Mall	Kurt Mergold	TX	United States	Houston	SESAME GINGER CHICKEN DUMPLINGS	1/6/2014 12:00:00 AM	106	899.94	10/18/2015 12:00:00 AM
Baybrook Mall	Kurt Mergold	TX	United States	Houston	SPINACH ARTICHOKE DIP*	1/6/2014 12:00:00 AM	46	482.54	10/18/2015 12:00:00 AM
Baybrook Mall	Kurt Mergold	TX	United States	Houston	THAI CHICKEN ROLLS	1/6/2014 12:00:00 AM	127	1141.73	10/18/2015 12:00:00 AM
Baybrook Mall	Kurt Mergold	TX	United States	Houston	TUSCAN HUMMUS	1/6/2014 12:00:00 AM	40	279.6	10/18/2015 12:00:00 AM
Baybrook Mall	Kurt Mergold	TX	United States	Houston	ASPARAGUS + ARUGULA SALAD	1/6/2014 12:00:00 AM	123	724.47	10/18/2015 12:00:00 AM
Baybrook Mall	Kurt Mergold	TX	United States	Houston	CRISPY MAC 'N' CHEESE	1/6/2014 12:00:00 AM	40	187.6	10/18/2015 12:00:00 AM
Baybrook Mall	Kurt Mergold	TX	United States	Houston	PETITE WEDGE SALAD	1/6/2014 12:00:00 AM	44	206.36	10/18/2015 12:00:00 AM
Baybrook Mall	Kurt Mergold	TX	United States	Houston	SPICY CHICKEN TINGA QUESADILLA	1/6/2014 12:00:00 AM	49	283.71	10/18/2015 12:00:00 AM
Baybrook Mall	Kurt Mergold	TX	United States	Houston	WHITE CORN GUACAMOLE + CHIPS	1/6/2014 12:00:00 AM	57	369.93	10/18/2015 12:00:00 AM

Column Name Entity

- Store Location 'Store Sales'
- Store Manager Location\$
- State Location\$
- Country Location\$
- City Location\$
- Product 'Store Sales'
- POS Date 'Store Sales'
- Quantity 'Store Sales'
- Sales Amount 'Store Sales'
- Due Date 'Store Sales'

## Consolidate

The Consolidate function can be used to consolidate different values together to correct data input errors or to create different groups. Right-click on an attribute to access the Consolidate function.



Sometimes incorrect values are entered into a database due to mistakes or imprecise business rules, for example, the Store Location of state could be entered as "CA" or "California". In order to

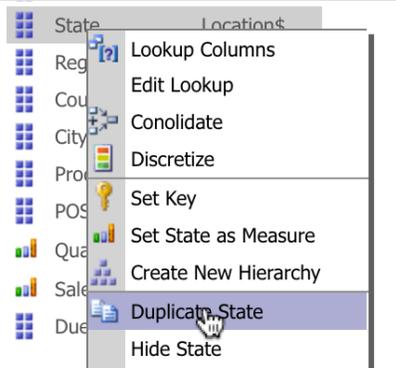
consolidate these two different values into one consistent value, a user can use the Consolidate feature to set “California” to “CA”.

Consolidate

Show edited rows only

State	Count	New Value
CA	3	
California	1	CA
FL	2	
IL	2	
MI	1	
NY	2	
TX	2	
WA	2	

Another use of the Consolidate function is to create custom groups of items, for example, to group related states into a region. In the example below, you can duplicate the State attribute. The original State attribute is untouched and the duplicated State attribute is renamed, “Region”.



Column Name	Entity
Store Location	'Store Sales\$'
Store Manager	Location\$
State	Location\$
Region	Location\$
Country	Location\$

Then, use the Consolidate function to assign individual states into different regions.

Consolidate

Show edited rows only

State	Count	New Value
CA	3	WEST
California	1	WEST
FL	2	EAST
IL	2	CENTRAL
MI	1	CENTRAL
NY	2	EAST
TX	2	CENTRAL
WA	2	WEST

The results can be seen in the Fact View table.

Store Location	Store Manager	State	Region	Country	City	Product
Baybrook Mall	Kurt Mergold	TX	CENTRAL	United States	Houston	AVOCADO CLUB EGG ROLLS
Baybrook Mall	Kurt Mergold	TX	CENTRAL	United States	Houston	BAJA CHICKEN ROLLS
Baybrook Mall	Kurt Mergold	TX	CENTRAL	United States	Houston	LETTUCE WRAPS
Baybrook Mall	Kurt Mergold	TX	CENTRAL	United States	Houston	MEDITERRANEAN VEGGIE ROLLS
Baybrook Mall	Kurt Mergold	TX	CENTRAL	United States	Houston	SESAME GINGER CHICKEN DUMPLINGS
Baybrook Mall	Kurt Mergold	TX	CENTRAL	United States	Houston	SPINACH ARTICHOKE DIP*
Baybrook Mall	Kurt Mergold	TX	CENTRAL	United States	Houston	THAI CHICKEN ROLLS
Baybrook Mall	Kurt Mergold	TX	CENTRAL	United States	Houston	TUSCAN HUMMUS

After processing, the Region attribute can now be used in reports.

▼ PivotTable1

Drop a Filter Condition Here

Row - 1/2

DataPackage 1	Region			
	CENTRAL	EAST	WEST	Grand Total
Product	Sales Amount	Sales Amount	Sales Amount	Sales Amount
ASPARAGUS + ARUGULA SALAD	131,954	80,587	132,766	345,307
ASPARAGUS + SPINACH SPAGHETTINI	262,499	153,411	288,342	704,253
AVOCADO CLUB EGG ROLLS	224,393	138,218	231,146	593,757
BAJA CHICKEN ROLLS	202,518	113,939	200,765	517,222
BELGIAN CHOCOLATE SOUFFLÉ CAKE	138,776	90,717	145,259	374,752
BUTTER CAKE	147,972	92,385	144,000	384,357
CALIFORNIA CLUB	310,144	183,759	320,595	814,498
CALIFORNIA CLUB SANDWICH	271,070	153,027	271,283	695,381
CALIFORNIA COBB	326,151	186,587	335,085	847,822
CALIFORNIA FIELDS	294,703	165,900	306,601	767,203

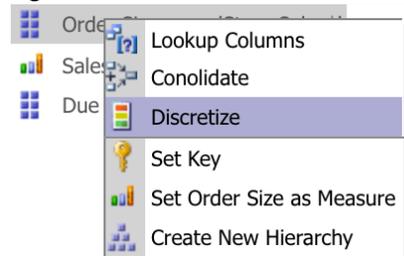
## Discretize

Discretize is often used to create date or value attribute groups. For example, age might be grouped into Teens, Adults, and Seniors, or Company size is often grouped into Small, Mid-Size, or Large based on number of employees.

Using the sample data as an example, first duplicate the Quantity attribute then change its name to “Order Size”. Then choose **Set Measure As Attribute** from the shortcut menu to change it from a Measure to Attribute.

	POS Date	'Store Sales\$'
	Quantity	'Store Sales\$'
	Order Size	'Store Sales\$'
	Sales Amount	'Store Sales\$'
	Due Date	'Store Sales\$'

Right-click on the new Order Size attribute and select *Discretize*.



The Discretize function will first display the minimum and maximum value of Order Size. The user can then decide the range of groups to define, for example between 0-30 as Small Order, 30-100 as Medium Order, and any value greater than 100 as Large Order.

### Discretize

Minimum 20  
Maximum 170

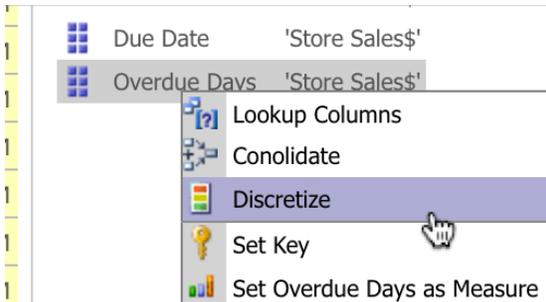
Begin	End	Description
0	30	Small Order
30	100	Medium Order
100		Large Order

Results are shown in the Preview.

Product	POS Date	Quantity	Order Size	Sales Amount	Due Date
AVOCADO CLUB EGG ROLLS	1/6/2014 12:00:00 AM	32	Medium Order	332.48	10/18/2015 12:00:00 AM
BAJA CHICKEN ROLLS	1/6/2014 12:00:00 AM	118	Large Order	1060.82	10/18/2015 12:00:00 AM
LETTUCE WRAPS	1/6/2014 12:00:00 AM	80	Medium Order	799.2	10/18/2015 12:00:00 AM
MEDITERRANEAN VEGGIE ROLLS	1/6/2014 12:00:00 AM	63	Medium Order	566.37	10/18/2015 12:00:00 AM
SESAME GINGER CHICKEN DUMPLINGS	1/6/2014 12:00:00 AM	106	Large Order	899.94	10/18/2015 12:00:00 AM
SPINACH ARTICHOKE DIP*	1/6/2014 12:00:00 AM	46	Medium Order	482.54	10/18/2015 12:00:00 AM
THAI CHICKEN ROLLS	1/6/2014 12:00:00 AM	127	Large Order	1141.73	10/18/2015 12:00:00 AM
TUSCAN HUMMUS	1/6/2014 12:00:00 AM	40	Medium Order	279.6	10/18/2015 12:00:00 AM
ASPARAGUS + ARUGULA SALAD	1/6/2014 12:00:00 AM	123	Large Order	724.47	10/18/2015 12:00:00 AM
CRISPY MAC 'N' CHEESE	1/6/2014 12:00:00 AM	40	Medium Order	187.6	10/18/2015 12:00:00 AM
PETITE WEDGE SALAD	1/6/2014 12:00:00 AM	44	Medium Order	206.36	10/18/2015 12:00:00 AM

Another use for Discretize is to calculate lapsed dates or times. For example, to calculate lapsed overdue days in accounts receivable (*Now - Due date*), or to calculate inventory shelf-date (*Now - Date Stocked*), or total time spent on a project (project end date - project start date).

Using the sample data as an example, first duplicate Due Date from the Fact View, and name it Overdue Days.



The Discretize function treats Date data types differently than regular values. A user can select to calculate lapsed days based on *current day*, another Date column or a Specified date.

Users can also define groups based on a range.

### Discretize

Today  
 Column   
 User Specified

Begin	End	Description
0	30	0-30
30	60	30-60
60	90	60-90
90	180	90-180
180	360	180-360
360		>360

The Fact View now displays the Overdue Days column displaying the calculated defined ranges.

Quantity	Order Size	Sales Amount	Due Date	Overdue Days
32	Medium Order	332.48	10/18/2015 12:00:00 AM	180-360
118	Large Order	1060.82	10/18/2015 12:00:00 AM	180-360
80	Medium Order	799.2	10/18/2015 12:00:00 AM	180-360
63	Medium Order	566.37	10/18/2015 12:00:00 AM	180-360
106	Large Order	899.94	10/18/2015 12:00:00 AM	180-360
46	Medium Order	482.54	10/18/2015 12:00:00 AM	180-360
127	Large Order	1141.73	10/18/2015 12:00:00 AM	180-360
40	Medium Order	279.6	10/18/2015 12:00:00 AM	180-360
123	Large Order	724.47	10/18/2015 12:00:00 AM	180-360

Here is an example of a pivot table using the Overdue Days and Region attributes.

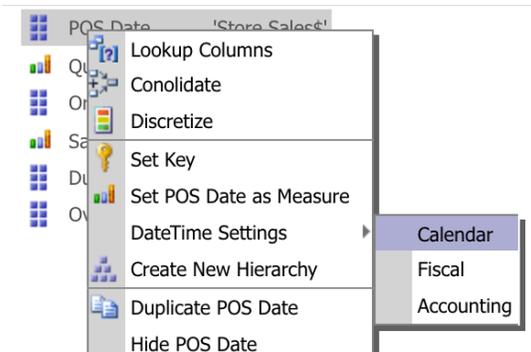
**PivotTable1**  
Drop a Filter Condition Here

DataPackage 1	Region			Grand Total
	CENTRAL	EAST	WEST	
Overdue Days	Sales Amount	Sales Amount	Sales Amount	Sales Amount
0-30	1,130,046	592,564	1,449,536	3,172,146
30-60	2,377,787	1,421,909	2,417,909	6,217,605
60-90	1,912,414	1,147,769	1,910,741	4,970,924
90-180	6,204,817	3,712,363	6,220,123	16,137,304
180-360	10,501,759	6,316,529	10,433,198	27,251,486
<b>Grand Total</b>	22,126,823	13,191,135	22,431,507	57,749,465

### DateTime Settings

The DateTime Settings function is used to create hierarchies based on date and time. The DateTime hierarchies can handle common date time calculations including growth and regression, YTD, QTD, parallel period comparisons, prior period comparisons, and many more.

Users can set up different calendars for different reporting requirements, from a common fiscal calendar to more industry specific Retail or Manufacturing calendars such as a 4-4-5, 4-5-4, or 5-4-4 calendar based on accounting periods.



Calendar – General calendar type. By selecting this option, Analyzer will convert the POS Data attribute, in this example, to Year, Quarter, Month, Weeks, and Day attributes. Hierarchies based on Date are also created.

Configure Calendar

Enabled

Date Attributes

Attribute	Member Prefix	Member Suffix
<input checked="" type="checkbox"/> Year	CY	
<input checked="" type="checkbox"/> Quarter		
<input checked="" type="checkbox"/> Month		
<input checked="" type="checkbox"/> Week		
<input checked="" type="checkbox"/> Day		
<input type="checkbox"/> Hour		
<input type="checkbox"/> Minute		

Date Hierarchies

Y-M-D

Y-Q-M-D

Y-Q-M-W-D

Y-W

Y-M-D-H

Ok Cancel

The Member Prefix field lets users add a prefix or postfix to member names, for example changing 2015 to CY2015.

After the Calendar is enabled on the POS Date attribute, the icon now turns into a calendar.

	City	Location\$
	Product	'Store Sales\$'
	POS Date	'Store Sales\$'
	Quantity	'Store Sales\$'
	Order Size	'Store Sales\$'

Checking the POS Date dimension on the *Analytic Model* sheet reveals additional date related attributes now associated to the POS Date dimension.

POS Date

- Calendar
  - Calendar Quarter
  - Calendar Quarter of Year
  - Calendar Week
  - Calendar Week of Year
  - Calendar Year
  - Calendar Y-M-D
  - Calendar Y-Q-M-D
  - Calendar Y-W
- Day Name
- Day of Month
- Month
- Month of Year

Reports based on time can now be build using these new attributes and hierarchies.

▼ PivotTable1  
Drop a Filter Condition Here

Year ▼   Quarter ▼												
DataPackage 1												
CY 2014												
Q1 CY 2014				Q2 CY 2014			Q3 CY 2014			Q4 CY 2014		
Region ▼	▼ Sales Amount	▼ YTD	▼ Quarter Growth Rate	▼ Sales Amount	▼ YTD	▼ Quarter Growth Rate	▼ Sales Amount	▼ YTD	▼ Quarter Growth Rate	▼ Sales Amount	▼ YTD	▼ Quarter Growth Rate
CENTRAL	6,232,591	6,232,590.8	-	6,192,810	12,425,401.0	-0.64 %	6,193,589	18,618,990.2	0.01 %	3,507,833	22,126,823.3	-43.36 %
EAST	3,711,159	3,711,159.0	-	3,759,439	7,470,597.9	1.30 %	3,706,064	11,176,661.8	-1.42 %	2,014,473	13,191,134.6	-45.64 %
WEST	6,157,589	6,157,589.2	-	6,177,438	12,335,027.1	0.32 %	6,229,034	18,564,061.3	0.84 %	3,867,445	22,431,506.6	-37.91 %
<b>Grand Total</b>	<b>16,101,339</b>	<b>16,101,339.0</b>	<b>-</b>	<b>16,129,687</b>	<b>32,231,026.0</b>	<b>0.18 %</b>	<b>16,128,687</b>	<b>48,359,713.2</b>	<b>-0.01 %</b>	<b>9,389,751</b>	<b>57,749,464.6</b>	<b>-41.78 %</b>

Fiscal – You can define a Fiscal calendar by setting the first month of the fiscal year, for example, if the first month of the fiscal year is July then select July as the first month of the fiscal year.

The Member Prefix and Suffix can be used again if desired, for example, to change 2015 to FY 2015.

### Configure Fiscal

Enabled

First month of fiscal year

Date Attributes

Attribute	Member Prefix	Member Suffix
<input checked="" type="checkbox"/> Year	FY	
<input checked="" type="checkbox"/> Quarter		
<input checked="" type="checkbox"/> Month		
<input checked="" type="checkbox"/> Week		
<input checked="" type="checkbox"/> Day		
<input type="checkbox"/> Hour		
<input type="checkbox"/> Minute		

Date Hierarchies

- Y-M-D
- Y-Q-M-D
- Y-Q-M-W-D
- Y-W
- Y-M-D-H

Ok Cancel

The Analytic Model sheet reveals the additional Fiscal Calendar attributes and hierarchies.

- Fiscal
  - Fiscal Quarter
  - Fiscal Quarter of Year
  - Fiscal Week
  - Fiscal Week of Year
  - Fiscal Year
  - + Fiscal Y-M-D
  - + Fiscal Y-Q-M-D
  - + Fiscal Y-W
  - Day Name
  - Day of Month
  - Month
  - Month of Year

An example of a pivot table using the newly created Fiscal attributes and hierarchy.

**PivotTable1**  
Drop a Filter Condition Here

DataPackage 1						
Region	Sales Amount	Sales Amount	Sales Amount	Sales Amount	Sales Amount	Sales Amount
FY 2014						
Q1 FY 2015						
July 2014		August 2014		September 2014		Q1 FY 2015 Subtotal
Q2 FY 2015						
CENTRAL	12,425,401	1,918,982	1,886,379	2,388,228	6,193,589	3,507,833
EAST	7,470,598	1,138,903	1,138,651	1,428,510	3,706,064	2,014,473
WEST	12,335,027	1,932,471	1,925,398	2,371,165	6,229,034	3,867,445
<b>Grand Total</b>	32,231,026	4,990,356	4,950,428	6,187,903	16,128,687	9,389,751

Accounting – The Configure Accounting dialog box can be used to define non-equally divided periods like 4-4-5 (first two periods of a quarter are 4 weeks each, and the third period is 5 weeks). In addition, users can set the first day of the week as defined by their accounting rules.

### Configure Accounting

Enabled

Period Settings

1st	2nd	3rd	First day
4	4	5	Monday
			Monday

Date Attributes

Attribute	Member Prefix	Member Suffix
<input checked="" type="checkbox"/> Year		
<input checked="" type="checkbox"/> Quarter		
<input checked="" type="checkbox"/> Period		
<input checked="" type="checkbox"/> Week		
<input checked="" type="checkbox"/> Day	<input type="checkbox"/> Hour	<input type="checkbox"/> Minute

Date Hierarchies

Y-P-D  Y-Q-P-D  Y-Q-P-W-D  Y-W  Y-P-D-H

Ok Cancel

Checking the Analytics Model sheet reveals the 4-4-5 related attributes and hierarchies.

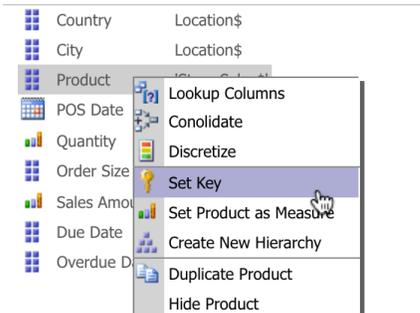
- [-] 445
  - 445 Period
  - 445 Period of Year
  - 445 Quarter
  - 445 Quarter of Year
  - 445 Week
  - 445 Week of Year
  - 445 Year
  - + 445 Y-P-D
  - + 445 Y-Q-P-D
  - + 445 Y-Q-P-W-D
  - + 445 Y-W

Example of a pivot table using the 4-4-5 calendar. Notice the first two periods have 4 weeks in each period and the final period has 5 weeks.

DataPackage 1				Drop a Column Dimension Here
Year	Quarter	Period	Week	Sales Amount
2014	Q1 2014			13,639,482
	Q2 2014	Period4 2014	W13 2014	1,217,280
			W14 2014	1,244,577
			W15 2014	1,232,717
			W16 2014	1,227,573
		<b>Period4 2014 Subtotal</b>		4,922,147
		Period5 2014	W17 2014	1,275,521
			W18 2014	1,236,340
			W19 2014	1,246,808
			W20 2014	1,223,510
		<b>Period5 2014 Subtotal</b>		4,982,178
		Period6 2014	W21 2014	1,249,995
			W22 2014	1,245,120
			W23 2014	1,212,563
			W24 2014	1,261,441
			W25 2014	1,232,080
		<b>Period6 2014 Subtotal</b>		6,201,200

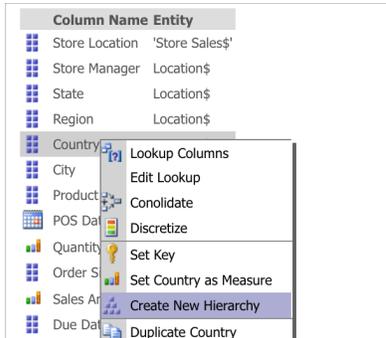
### Set Key

Users can set a unique attribute in the Fact View as the Key Attribute, however if unsure, simply let Analyzer generate the key field.

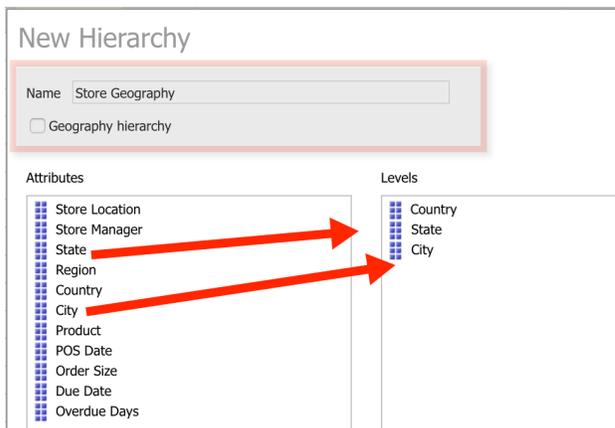


## Create New Hierarchy

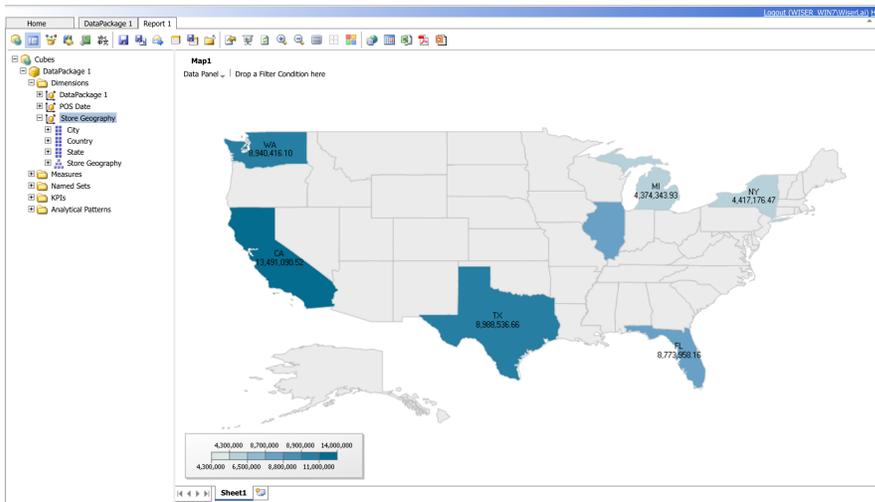
Attributes with one-to-many relationship can be grouped into hierarchy for drilldown analysis.



To create a new hierarchy, first right-click an attribute in the Fact view and choose Create New Hierarchy from the shortcut menu. Give the new hierarchy a name and then drag additional members to the right to include as new levels in the hierarchy, then re-arrange the order as necessary. If the hierarchy is based on geography data, then select the **Geography hierarchy** checkbox so it can be used with our Intelligent Map component.



An example using a geography hierarchy in an Intelligent Map.



## Edit Member Properties

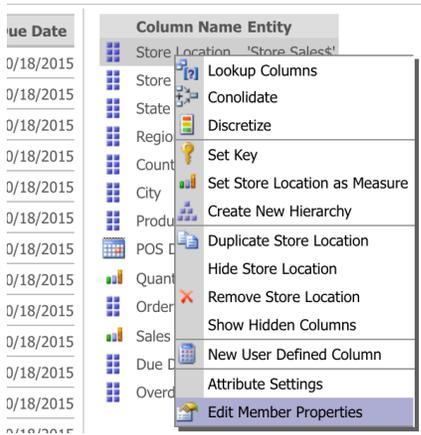
A member property is an attribute member's properties, for example, for the Store Location attribute member, [Irvine Spectrum], the store manager is [Mishna Jones] and the store is located in the state of [CA], all these are member properties of [Irvine Spectrum].

One attribute member can have one-to-many relationships with other attribute members, for example there can be a single Store Manager for multiple Store Locations.

Below is an example showing associated member properties for each of the Store Locations.

▼ PivotTable1					
Drop a Filter Condition Here					
Row - 1/3					
DataPackage 1					Drop a Column Dimension Here
Product ▼	Store Location ▼	City	State	Store Manager	Sales Amount
☑ ASPARAGUS + ARUGULA SALAD	Baybrook Mall	Houston	TX	Kurt Mergold	27,100
	Countryside Mall	Clearwater	FL	Abdi Barrett	29,868
	Downtown Seattle	Seattle	WA	Corey Johar	22,971
	Edison Mall	Fort Myers	FL	Tony Matsumoto	25,415
	Fashion Island	Newport Beach	CA	Lisa Salinas	27,118
	Fox Velly Mall	Aurora	IL	Abraham Linton	23,961
	Irvine Spectrum	Irvine	CA	Mishna Jones	28,260
	Joliet Mall	Joliet	IL	Anya Lao	27,854
	Laguna Hills Mall	Laguna Hills	CA	Bernat Linton	25,863
	Roosevelt Field	Garden City	NY	Shea Smith	25,303
	Southcenter Mall	Seattle	WA	Howard Tiana	28,555
	Sugarland	Sugar Land	TX	Boris Barrett	26,823
Westland Mall	Westland	MI	Eric Lin	26,216	
<b>ASPARAGUS + ARUGULA SALAD Subtotal</b>					<b>345,307</b>

Member properties can be easily added to an attribute by right-clicking on an attribute and selecting **Edit Member Properties**. In the Define Member Properties dialog simply select the items to be included.



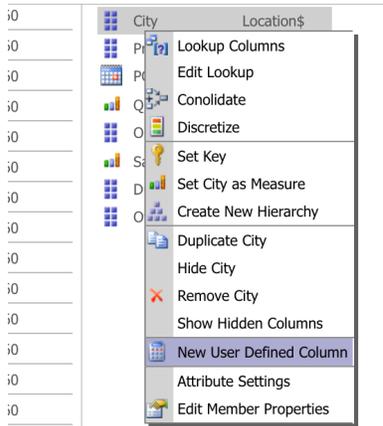
### Define Member Properties



### New User Defined Columns

Advanced T-SQL and database knowledge is required to use this feature. Currently, this feature is only available to users who are members of the System Administrator and Report Designer roles. Please note that the User Defined Columns created cannot be part of calculations that include other User Defined Columns, nor can they be used with the Consolidate or Discretize functions. Inappropriate use may produce invalid Fact View and performance issues during cube processing.

Right-click on any attribute to select **New User Defined Column** to create a new column.



Example below of a new User Defined Column called Order Status - If Quantity < 30 then set the Order Status to display “OK” otherwise set it to display “Good”.

### User Defined Column

Name

Expression

IIF( [Quantity] < 30, 'OK', 'Good' )

If the SQL statement entered is valid then a new Order Status attribute is shown in Fact View.

POS Date	Quantity	Order Size	Sales Amount	Due Date	Overdue Days	Order Status
1/6/2014 12:00:00 AM	28	Small Order	316.12	10/18/2015 12:00:00 AM	180-360	OK
1/6/2014 12:00:00 AM	129	Large Order	1714.41	10/18/2015 12:00:00 AM	180-360	Good
1/6/2014 12:00:00 AM	67	Medium Order	856.93	10/18/2015 12:00:00 AM	180-360	Good
1/6/2014 12:00:00 AM	136	Large Order	1861.84	10/18/2015 12:00:00 AM	180-360	Good
1/6/2014 12:00:00 AM	87	Medium Order	1217.13	10/18/2015 12:00:00 AM	180-360	Good
1/6/2014 12:00:00 AM	103	Large Order	1368.87	10/18/2015 12:00:00 AM	180-360	Good
1/6/2014 12:00:00 AM	93	Medium Order	1301.07	10/18/2015 12:00:00 AM	180-360	Good
1/6/2014 12:00:00 AM	55	Medium Order	840.95	10/18/2015 12:00:00 AM	180-360	Good
1/6/2014 12:00:00 AM	50	Medium Order	684.5	10/18/2015 12:00:00 AM	180-360	Good
1/6/2014 12:00:00 AM	120	Large Order	1918.8	10/18/2015 12:00:00 AM	180-360	Good
1/6/2014 12:00:00 AM	104	Large Order	1590.16	10/18/2015 12:00:00 AM	180-360	Good
1/6/2014 12:00:00 AM	61	Medium Order	975.39	10/18/2015 12:00:00 AM	180-360	Good
1/6/2014 12:00:00 AM	161	Large Order	2526.09	10/18/2015 12:00:00 AM	180-360	Good
1/6/2014 12:00:00 AM	139	Large Order	1847.31	10/18/2015 12:00:00 AM	180-360	Good
1/6/2014 12:00:00 AM	21	Small Order	125.79	10/18/2015 12:00:00 AM	180-360	OK

### Processing the Data Package



After the initial design or modification of the data package is complete, click the *Process* icon on the toolbar to process the data package.



Store Location	Store Manager	State	Region	Country	City	Product	POS Date	Quantity
Baybrook Mall	Kurt Mergold	TX	CENTRAL	United States	Houston	AVOCADO CLUB EGG ROLLS	1/6/2014 12:00:00 AM	32
Baybrook Mall	Kurt Mergold	TX	CENTRAL	United States	Houston	BAJA CHICKEN ROLLS	1/6/2014 12:00:00 AM	118
Baybrook Mall	Kurt Mergold	TX	CENTRAL	United States	Houston	LETTUCE WRAPS	1/6/2014 12:00:00 AM	80
Baybrook Mall	Kurt Mergold	TX	CENTRAL	United States	Houston	MEDITERRANEAN VEGGIE ROLLS	1/6/2014 12:00:00 AM	63
Baybrook Mall	Kurt Mergold	TX	CENTRAL	United States	Houston	SESAME GINGER CHICKEN DUMPLINGS	1/6/2014 12:00:00 AM	106

### Create New Report

Once the data package is processed, click on the *Create New Report* icon to create a new report.



Store Location	Store Manager	State	Region	Country	City	Product	POS Date	Quantity
Baybrook Mall	Kurt Mergold	TX	CENTRAL	United States	Houston	AVOCADO CLUB EGG ROLLS	1/6/2014 12:00:00 AM	32
Baybrook Mall	Kurt Mergold	TX	CENTRAL	United States	Houston	BAJA CHICKEN ROLLS	1/6/2014 12:00:00 AM	118
Baybrook Mall	Kurt Mergold	TX	CENTRAL	United States	Houston	LETTUCE WRAPS	1/6/2014 12:00:00 AM	80
Baybrook Mall	Kurt Mergold	TX	CENTRAL	United States	Houston	MEDITERRANEAN VEGGIE ROLLS	1/6/2014 12:00:00 AM	63
Baybrook Mall	Kurt Mergold	TX	CENTRAL	United States	Houston	SESAME GINGER CHICKEN DUMPLINGS	1/6/2014 12:00:00 AM	106

The left panel of the report design screen shows the dimensions, measures and attributes of the new data package.

Home | DataPackage 1 | Report 1 | Report 2 | Report 3 | Logout (WISER\_WIN7\WiserLa) Help

**PivotTable1**  
Drop a Filter Condition Here

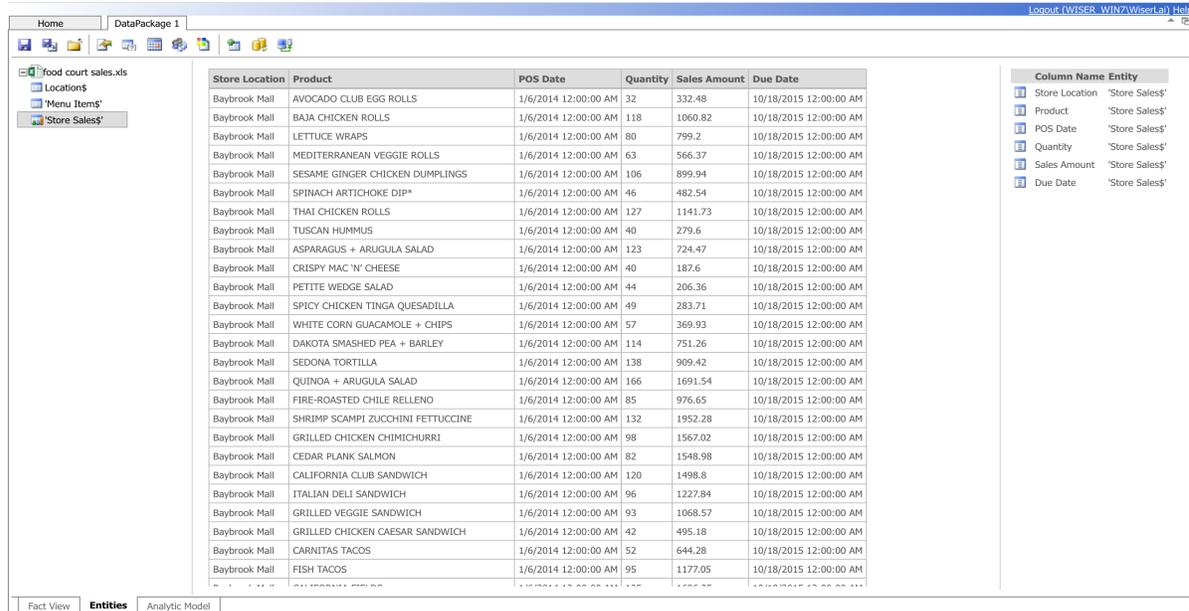
DataPackage 1		Month										
		Jan 2014	February 2014	March 2014	April 2014	May 2014	June 2014	July 2014	August 2014	September 2014	October 2014	Nov 2014
Store Location	Sales Amount	400,739	380,994	471,991	383,475	370,915	468,815	378,787	377,401	480,364	384,393	
Baybrook Mall		400,739	380,994	471,991	383,475	370,915	468,815	378,787	377,401	480,364	384,393	
Countryside Mall		368,828	390,703	477,066	378,379	399,390	467,061	366,970	371,315	479,740	382,313	
Downtown Seattle		375,624	379,223	462,912	377,609	380,194	456,622	396,952	393,494	480,470	387,897	
Edison Mall		400,216	381,130	476,591	374,945	378,732	483,490	376,356	377,169	471,496	369,033	
Fashion Island		379,457	362,216	467,430	396,092	385,296	461,230	385,375	385,944	472,563	383,124	
Foxeey Mall		363,407	385,062	494,211	378,473	387,417	469,552	396,260	390,671	468,635	381,702	
Marine Spectrum		382,122	381,217	478,405	372,216	381,431	482,296	385,826	377,290	478,302	395,104	
Joliet Mall		364,333	385,326	481,885	384,873	383,659	486,801	369,931	383,659	474,584	363,188	
Laguna Hills Mall		370,632	386,800	493,589	371,852	376,045	511,377	382,869	382,529	472,037	389,378	
Roosevelt Field		389,079	376,760	450,786	413,345	384,783	479,315	395,577	390,167	477,275	372,958	
Southcenter Mall		379,586	391,990	466,386	381,214	378,229	465,736	381,449	386,141	467,793	379,954	
Sugarland		384,398	376,989	500,774	392,936	380,953	481,323	387,330	362,633	482,663	377,325	
Westland Mall		383,752	384,838	473,891	366,744	378,390	478,485	386,674	372,016	481,982	387,713	
<b>Grand Total</b>		<b>4,942,175</b>	<b>4,963,247</b>	<b>6,195,917</b>	<b>4,972,151</b>	<b>4,965,433</b>	<b>6,192,103</b>	<b>4,990,356</b>	<b>4,950,428</b>	<b>6,187,903</b>	<b>4,955,081</b>	

## Entities Management

### What is an Entity?

An Entity is an object that connects to a target data source like one of the Excel data sheets, a SQL Server table, an Oracle query, or a Salesforce.com Leads table.

The example below shows a Connection with three entities each associated to one of the Excel data sheets in the same Excel file.



The screenshot displays the Strategy Companion interface. On the left, a file explorer shows 'food court sales.xls' with three entities: 'Locations\$', 'Menu Items\$', and 'Store Sales\$'. The 'Store Sales\$' entity is selected. The main area shows a data table with columns: Store Location, Product, POS Date, Quantity, Sales Amount, and Due Date. The table contains 25 rows of sales data. On the right, a 'Column Name Entity' panel lists the columns and their associated entities: Store Location ('Store Sales\$'), Product ('Store Sales\$'), POS Date ('Store Sales\$'), Quantity ('Store Sales\$'), Sales Amount ('Store Sales\$'), and Due Date ('Store Sales\$').

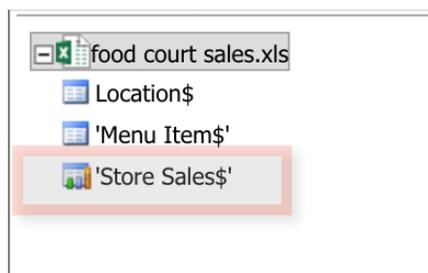
Store Location	Product	POS Date	Quantity	Sales Amount	Due Date
Baybrook Mall	AVOCADO CLUB EGG ROLLS	1/6/2014 12:00:00 AM	32	332.48	10/18/2015 12:00:00 AM
Baybrook Mall	BAJA CHICKEN ROLLS	1/6/2014 12:00:00 AM	118	1060.82	10/18/2015 12:00:00 AM
Baybrook Mall	LETTUCE WRAPS	1/6/2014 12:00:00 AM	80	799.2	10/18/2015 12:00:00 AM
Baybrook Mall	MEDITERRANEAN VEGGIE ROLLS	1/6/2014 12:00:00 AM	63	566.37	10/18/2015 12:00:00 AM
Baybrook Mall	SESAME GINGER CHICKEN DUMPLINGS	1/6/2014 12:00:00 AM	106	899.94	10/18/2015 12:00:00 AM
Baybrook Mall	SPINACH ARTICHOKE DIP*	1/6/2014 12:00:00 AM	46	482.54	10/18/2015 12:00:00 AM
Baybrook Mall	THAI CHICKEN ROLLS	1/6/2014 12:00:00 AM	127	1141.73	10/18/2015 12:00:00 AM
Baybrook Mall	TUSCAN HUMMUS	1/6/2014 12:00:00 AM	40	279.6	10/18/2015 12:00:00 AM
Baybrook Mall	ASPARAGUS + ARUGULA SALAD	1/6/2014 12:00:00 AM	123	724.47	10/18/2015 12:00:00 AM
Baybrook Mall	CRISPY MAC 'N' CHEESE	1/6/2014 12:00:00 AM	40	187.6	10/18/2015 12:00:00 AM
Baybrook Mall	PETITE WEDGE SALAD	1/6/2014 12:00:00 AM	44	206.36	10/18/2015 12:00:00 AM
Baybrook Mall	SPICY CHICKEN TINGA QUESADILLA	1/6/2014 12:00:00 AM	49	283.71	10/18/2015 12:00:00 AM
Baybrook Mall	WHITE CORN GUACAMOLE + CHIPS	1/6/2014 12:00:00 AM	57	369.93	10/18/2015 12:00:00 AM
Baybrook Mall	DAKOTA SMASHED PEA + BARLEY	1/6/2014 12:00:00 AM	114	751.26	10/18/2015 12:00:00 AM
Baybrook Mall	SEDONA TORTILLA	1/6/2014 12:00:00 AM	138	909.42	10/18/2015 12:00:00 AM
Baybrook Mall	QUINOA + ARUGULA SALAD	1/6/2014 12:00:00 AM	166	1691.54	10/18/2015 12:00:00 AM
Baybrook Mall	FIRE-ROASTED CHILE RELLENO	1/6/2014 12:00:00 AM	85	976.65	10/18/2015 12:00:00 AM
Baybrook Mall	SHRIMP SCAMPI ZUCCHINI FETTUCCINE	1/6/2014 12:00:00 AM	132	1952.28	10/18/2015 12:00:00 AM
Baybrook Mall	GRILLED CHICKEN CHIMICHURRI	1/6/2014 12:00:00 AM	98	1567.02	10/18/2015 12:00:00 AM
Baybrook Mall	CEDAR PLANK SALMON	1/6/2014 12:00:00 AM	82	1548.98	10/18/2015 12:00:00 AM
Baybrook Mall	CALIFORNIA CLUB SANDWICH	1/6/2014 12:00:00 AM	120	1498.8	10/18/2015 12:00:00 AM
Baybrook Mall	ITALIAN DELI SANDWICH	1/6/2014 12:00:00 AM	96	1227.84	10/18/2015 12:00:00 AM
Baybrook Mall	GRILLED VEGGIE SANDWICH	1/6/2014 12:00:00 AM	93	1068.57	10/18/2015 12:00:00 AM
Baybrook Mall	GRILLED CHICKEN CAESAR SANDWICH	1/6/2014 12:00:00 AM	42	495.18	10/18/2015 12:00:00 AM
Baybrook Mall	CARNITAS TACOS	1/6/2014 12:00:00 AM	52	644.28	10/18/2015 12:00:00 AM
Baybrook Mall	FISH TACOS	1/6/2014 12:00:00 AM	95	1177.05	10/18/2015 12:00:00 AM

Each Data Package can have multiple connections to various data source types and each connection can have multiple entities.

Click on an Entity to preview its data. The panel on the right shows all the fields available for this Entity.

### Fact Entity

There can be only one Fact Entity in a single Data Package. The Fact Entity is the *transaction data* for analysis, which includes measures and attributes. The columns listed in the Fact View of a newly created Data Package is always from the Fact Entity, all other entities are added to the Fact View through Lookups. The icon below indicates *Store Sales* as the Fact Entity for this Data Package.



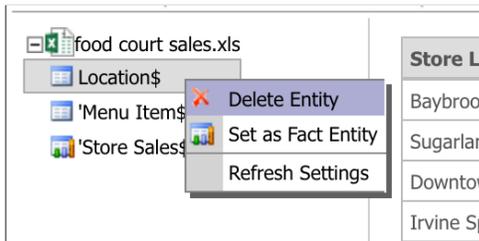
The screenshot shows the entity list for 'food court sales.xls'. The entities are 'Location\$', 'Menu Items\$', and 'Store Sales\$'. The 'Store Sales\$' entity is highlighted with a red border, indicating it is the Fact Entity.

To change the Fact Entity, right-click on an entity then select **Set as Fact Entity** to make it the new Fact Entity.



### Delete Entities

Any entity not used by the Fact View can be deleted at any time. If an entity is used by the Fact View then it must be removed from the Fact View before it can be deleted.



### Delete Columns

Any column within an entity can be deleted at any time if not being used in the Fact View, otherwise it has to be removed from the Fact View first.



### Import Entities

At any time, a user can import additional entities to a Data Package by clicking on the *Import Entities* function on the toolbar. The following example replaces the Menu Item entity with one that comes from a SQL Server database by first right-clicking on the Menu Item entity and selecting *Delete Entity*.

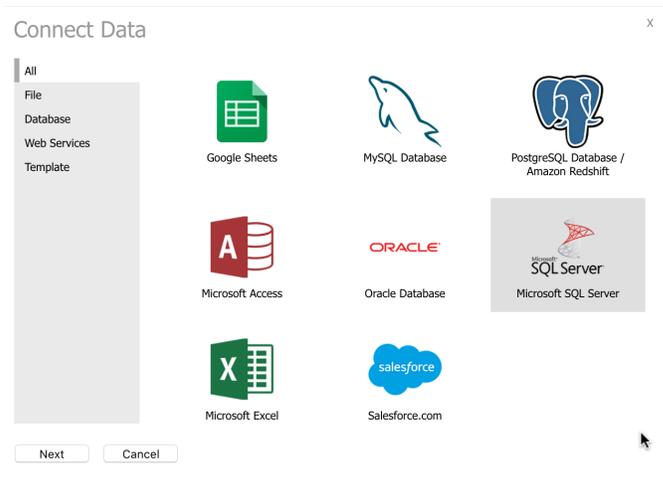
Home | DataPackage 1

Icons: Home, Refresh, Save, Print, Import, Export, etc.

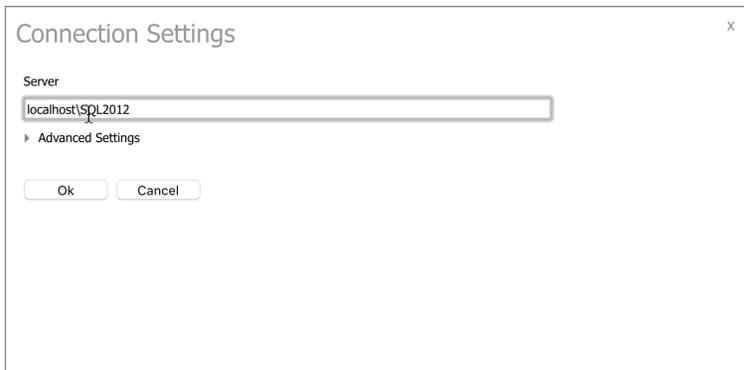
File Explorer: food court sales.xls, Locations\$, 'Menu Items\$', 'Store Sales'

Menu Category	Menu Item	Price
Appetizers	AVOCADO CLUB EGG ROLLS	10.39
Appetizers	BAJA CHICKEN ROLLS	8.99
Appetizers	LETTUCE WRAPS	9.99
Appetizers	MEDITERRANEAN VEGGIE ROLLS	8.99

Next, click the *Import Entities* icon to select *SQL Server* as the data source type.



Now enter the SQL Server for the connection



Enter the authentication information



Select the database tables, *Menu Item*, in this example

Database Navigator

Menu Item

Menu Category	Menu Item	Price
Appetizers	AVOCADO CLUB EGG ROLLS	10.39
Appetizers	BAJA CHICKEN ROLLS	8.99
Appetizers	LETTUCE WRAPS	9.99
Appetizers	MEDITERRANEAN VEGGIE ROLLS	8.99
Appetizers	SESAME GINGER CHICKEN DUMPLINGS	8.49
Appetizers	SPINACH ARTICHOKE DIP*	10.49
Appetizers	THAI CHICKEN ROLLS	8.99
Appetizers	TUSCAN HUMMUS	6.99
Small Plates	ASPARAGUS + ARUGULA SALAD	5.89
Small Plates	CRISPY MAC 'N' CHEESE	4.69
Small Plates	PETITE WEDGE SALAD	4.69
Small Plates	SPICY CHICKEN TINGA QUESADILLA	5.79
Small Plates	WHITE CORN GUACAMOLE + CHIPS	6.49
Soups	DAKOTA SMASHED PEA + BARLEY	6.59
Soups	SEDONA TORTILLA	6.59
Lite Adventruers	QUINOA + ARUGULA SALAD	10.19
Lite Adventruers	FIRE-ROASTED CHILE RELLENO	11.49
Lite Adventruers	SHRIMP SCAMPI ZUCCHINI FETTUCCINE	14.79
Lite Adventruers	GRILLED CHICKEN CHIMICHURRI	15.99
Lite Adventruers	CEDAR PLANK SALMON	18.89

Load Edit Query Cancel

Click **Load** to import the data to the Data Package. The *Entities* sheet should now have the new *Menu Item* entity displayed.

Home DataPackage 1

food court sales.xls

Location\$

'Store Sales\$'

localhost\SQL2012

Food Court Sales

Menu Item

Menu Category	Menu Item	Price
Appetizers	AVOCADO CLUB EGG ROLLS	10.39
Appetizers	BAJA CHICKEN ROLLS	8.99
Appetizers	LETTUCE WRAPS	9.99
Appetizers	MEDITERRANEAN VEGGIE ROLLS	8.99
Appetizers	SESAME GINGER CHICKEN DUMPLINGS	8.49
Appetizers	SPINACH ARTICHOKE DIP*	10.49
Appetizers	THAI CHICKEN ROLLS	8.99

Now you can use the **Lookup** function to associate columns from the *Menu Item* table with the *Fact View*.

Product	Menu Category	Price	POS Date	Quantity	Sales Amount
AVOCADO CLUB EGG ROLLS	Appetizers	10.39	1/6/2014 12:00:00 AM	32	332.48
BAJA CHICKEN ROLLS	Appetizers	8.99	1/6/2014 12:00:00 AM	118	1060.82
LETTUCE WRAPS	Appetizers	9.99	1/6/2014 12:00:00 AM	80	799.2
MEDITERRANEAN VEGGIE ROLLS	Appetizers	8.99	1/6/2014 12:00:00 AM	63	566.37
SESAME GINGER CHICKEN DUMPLINGS	Appetizers	8.49	1/6/2014 12:00:00 AM	106	899.94
SPINACH ARTICHOKE DIP*	Appetizers	10.49	1/6/2014 12:00:00 AM	46	482.54
THAI CHICKEN ROLLS	Appetizers	8.99	1/6/2014 12:00:00 AM	127	1141.73
TUSCAN HUMMUS	Appetizers	6.99	1/6/2014 12:00:00 AM	40	279.6
ASPARAGUS + ARUGULA SALAD	Small Plates	5.89	1/6/2014 12:00:00 AM	123	724.47
CRISPY MAC 'N' CHEESE	Small Plates	4.69	1/6/2014 12:00:00 AM	40	187.6
PETITE WEDGE SALAD	Small Plates	4.69	1/6/2014 12:00:00 AM	44	206.36
SPICY CHICKEN TINGA QUESADILLA	Small Plates	5.79	1/6/2014 12:00:00 AM	49	283.71
WHITE CORN GUACAMOLE + CHIPS	Small Plates	6.49	1/6/2014 12:00:00 AM	57	369.93
DAKOTA SMASHED PEA + BARLEY	Soups	6.59	1/6/2014 12:00:00 AM	114	751.26

Column Name	Entity
Store Location	'Store Sales'
Store Manager	Location\$
State	Location\$
Region	Location\$
Country	Location\$
City	Location\$
Product	'Store Sales'
Menu Category	Menu Item
Price	Menu Item
POS Date	'Store Sales'
Quantity	'Store Sales'
Sales Amount	'Store Sales'
Due Date	'Store Sales'
Order Status	'Store Sales'

### Refresh Settings

The *Refresh Settings* are used to keep entity data current. Each entity type has its own settings to accommodate different types of data. To access the *Refresh Settings* dialog box, right click on an entity and select *Refresh Settings* from the shortcut menu.

For relational data source types, the refresh settings are as follows:

No action – No refresh will be performed.

Replace current data in entity – This will replace all the data in the entity with new data.

Append new data to entity – Append data to entity.

A *Search condition* or *Full Statement* can be applied to limit the scope of data to be retrieved.

### Refresh Settings

Refresh Mode

No action

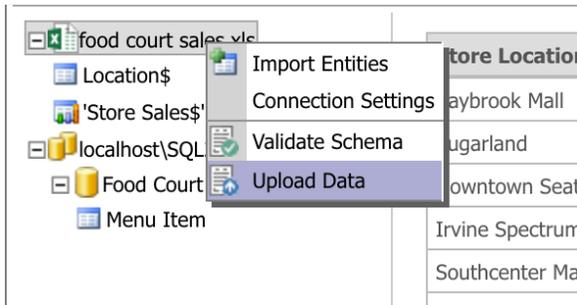
Replace current data in entity

Append new data to entity

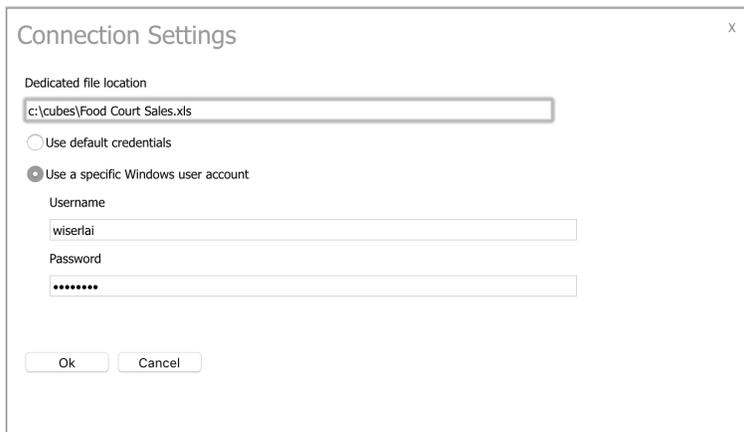
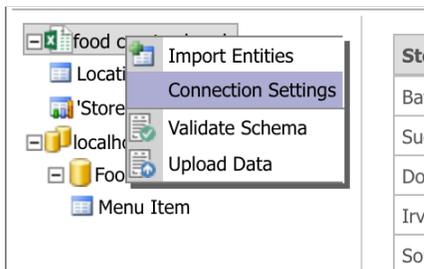
Search Condition  Full Statement

For a file data source type (Excel files), a refresh can be done in two ways.

The first method is to re-upload the file manually by selecting **Upload Data** from the contextual menu.



The second method, which is more automated, is to setup a default file and default path to the file using *Connection Settings*. The system will go to the target location to look for updated data. Once defined, a user would simply copy an updated file to the target location. Please note: The name of the Excel worksheets must match the entity name they are updating.



Refresh Settings can be applied separately to each of the Entities based on Excel worksheets Available options are:

No action – Do nothing.

Replace current data in entity – Replace entire data in current entity with new data.

Append new data to entity – Append new data to the existing entity.

### Refresh Settings

Refresh Mode

No action  
 Replace current data in entity  
 Append new data to entity

Perform refresh to test whether the settings are valid.



Menu Category	Menu Item	Price
Appetizers	AVOCADO CLUB EGG ROLLS	10.39
Appetizers	BAJA CHICKEN ROLLS	8.99
Appetizers	LETTUCE WRAPS	9.99
Appetizers	MEDITERRANEAN VEGGIE ROLLS	8.99

### Loading Data

- ✓ Location\$ (15 of 15 rows copied)
- ✓ 'Menu Item\$' (94 of 94 rows copied)
- 'Store Sales\$' (31900 of 65535 rows copied)

### Scheduled Refresh Settings

Click the *Data Package Scheduling* icon on the toolbar to set scheduled time to process a Data Package.



Store Location	Menu Item	POS Da
Baybrook Mall	AVOCADO CLUB EGG ROLLS	1/6/2014
Baybrook Mall	BAJA CHICKEN ROLLS	1/6/2014

Configure desired process time then enable the schedule to have the Data Package re-process based on a schedule.

## Schedule

Data Package DataPackage 3

Schedule Type Disabled

Simple

Advanced

Recurrence interval

4

Hours

Run this schedule every day at

8

:

0

Ok

Cancel

## Data Packages Properties

Select the Properties icon on the toolbar to rename a Data Package.

Store Location	Menu Item	POS Date	Quantity	Sales Amount	Due Date
Baybrook Mall	AVOCADO CLUB EGG ROLLS	1/6/2014 12:00:00 AM	32	332.48	10/18/2015 12:00:
Baybrook Mall	BAJA CHICKEN ROLLS	1/6/2014 12:00:00 AM	118	1060.82	10/18/2015 12:00:
Baybrook Mall	LETTUCE WRAPS	1/6/2014 12:00:00 AM	80	799.2	10/18/2015 12:00:

## DataPackage Settings

Name

DataPackage 3

Description

Advanced Settings

Database Name

DataPackage 3

Cube Name

DataPackage 3

Default Dimension Type

Regular

Ok

Cancel

### Save As

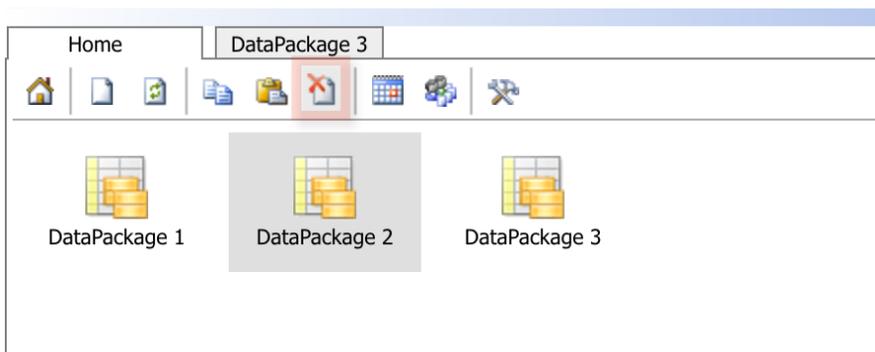
Select the Save-As icon on the toolbar to save the Data Package as a new object.



Store Location	Menu Item	POS Date	Quantity	Sales Amount	Due Date
Baybrook Mall	AVOCADO CLUB EGG ROLLS	1/6/2014 12:00:00 AM	32	332.48	10/18/2015 12:00:
Baybrook Mall	BAJA CHICKEN ROLLS	1/6/2014 12:00:00 AM	118	1060.82	10/18/2015 12:00:
Baybrook Mall	LETTUCE WRAPS	1/6/2014 12:00:00 AM	80	799.2	10/18/2015 12:00:

### Delete Data Packages

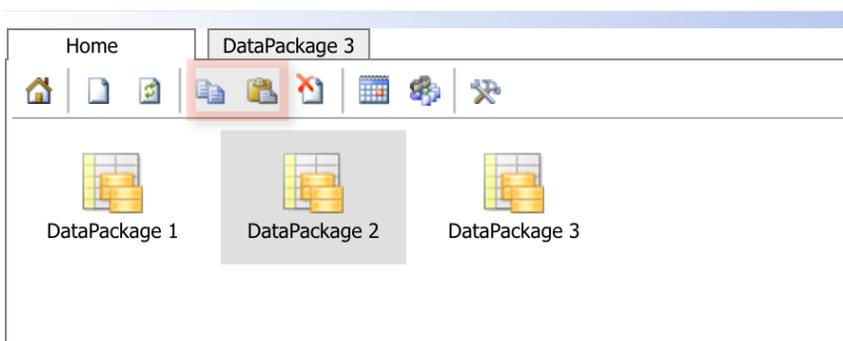
Select Delete Data Package on the toolbar to delete a Data Package.



DataPackage 1      DataPackage 2      DataPackage 3

### Copy/Paste Data Packages

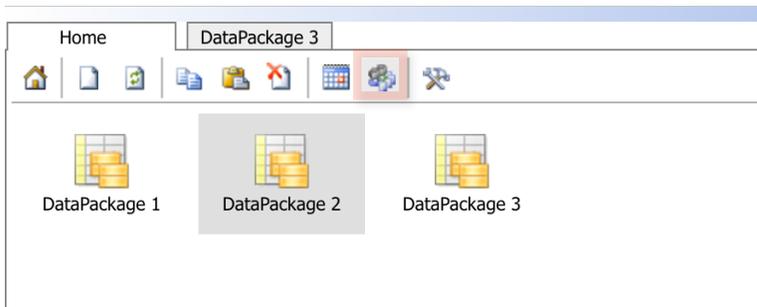
Select Copy/Paste on the toolbar to copy and paste a Data Package.



DataPackage 1      DataPackage 2      DataPackage 3

### Security Role Settings

Newly created Data Packages can only be used by its owner so to grant other users access to the Data Package, select the *Data Package Security* icon on the toolbar and select user roles to grant access to the Data Package.



## Roles

Data Package: DataPackage 2

Grant the following roles to access this data package

- Report Designers
- General Users
- Mobile Users
- Administrators

Ok

Cancel